



Single Family Green Development Case Study in Detroit, MI

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Project Participants

Bagley Housing
Association, Detroit



West Construction
Services, Pontiac



Steven C. Flum
Architects, Detroit

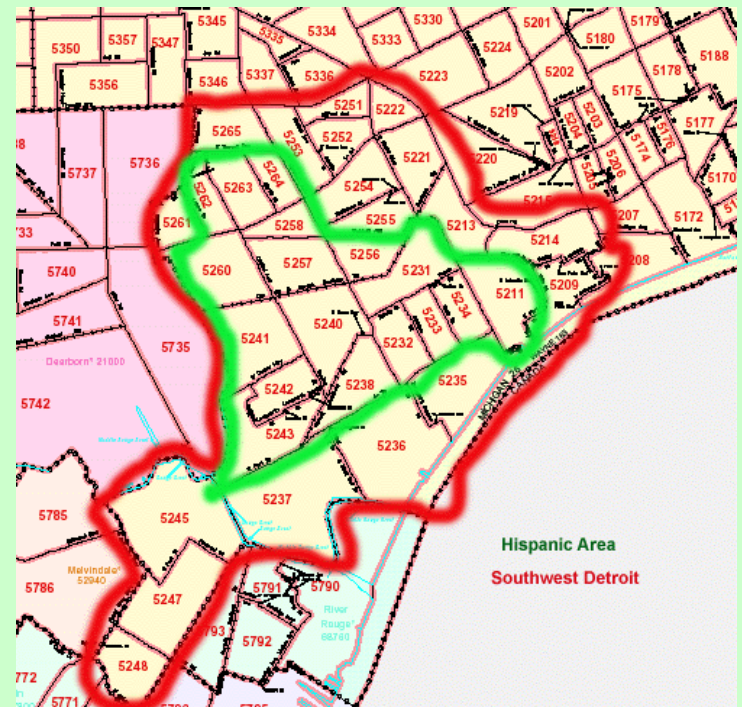


WARM Training, Detroit



Project Area

- Southwest Detroit
- Dense, urban; old neighborhood; Hispanic culture
- Low to moderate income
- Infill Housing: 1,400 sf, 3 bed, 2 bath, full basement, detached garage, 40'x100' lots
- Bungalows and two story homes – 23 homes in project



Infill Neighborhood



Project Under Construction



Project Under Construction



Project Under Construction



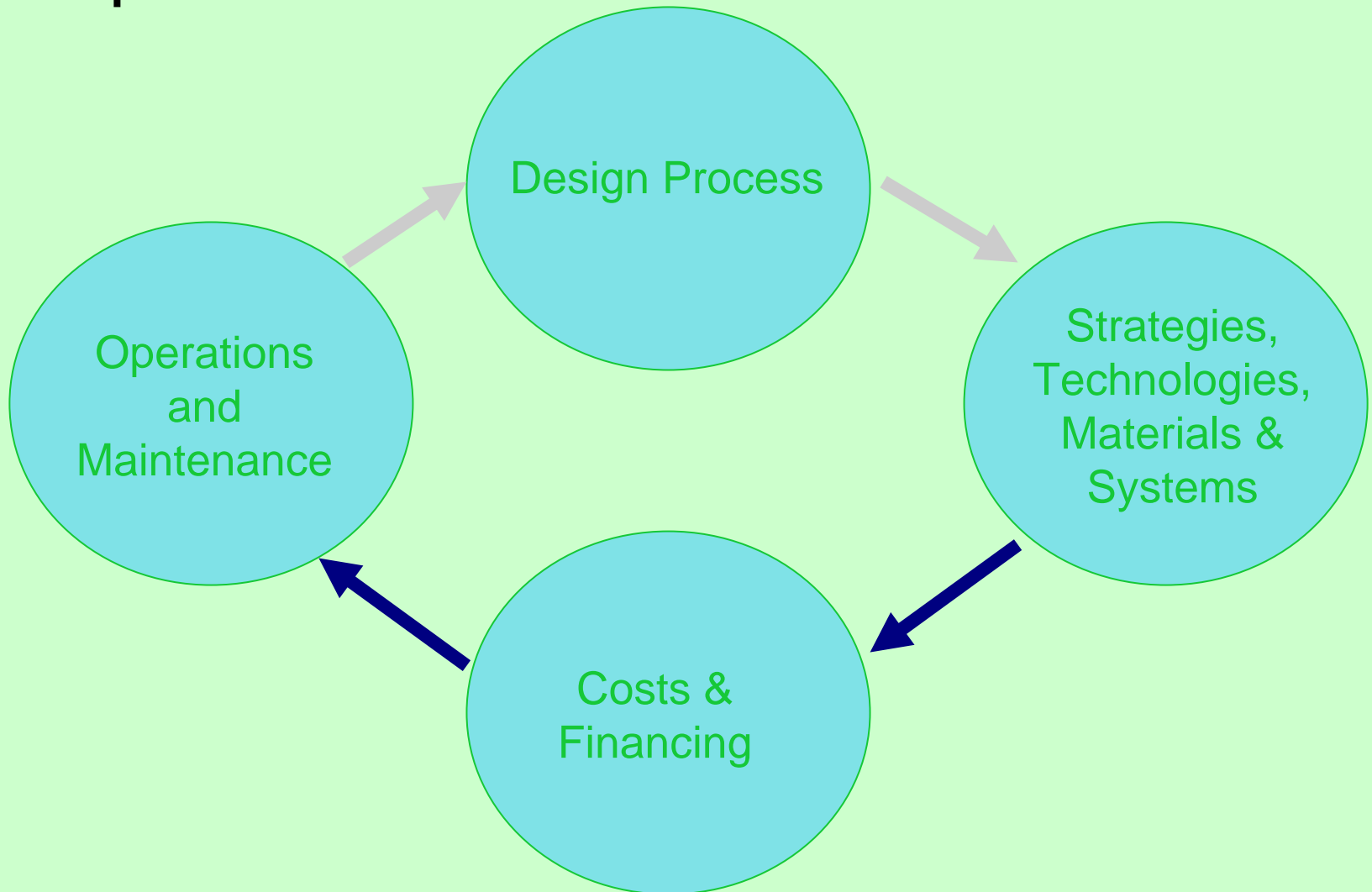


Which Standard to Follow?

- What does Green Building or High Performance building mean to you? What's important?
 - Attract \$\$ - Tax credits, grants, etc.?
 - Lower energy bills?
 - Lower Maintenance and Operating Costs?
 - Increase life span of building?
 - Improve air quality?
 - Green at any cost?
- Why are you considering building “high performance” homes?
- Ultimately Defined by Developer
- Builder and Architect should be involved as early as possible



Overall Process





Conventional Design Process

Planning

(Owner, mkt study, consultant)

Schematic Design

(Architect)

Design Development

(Arch, Engineer, Landscape)

Construction

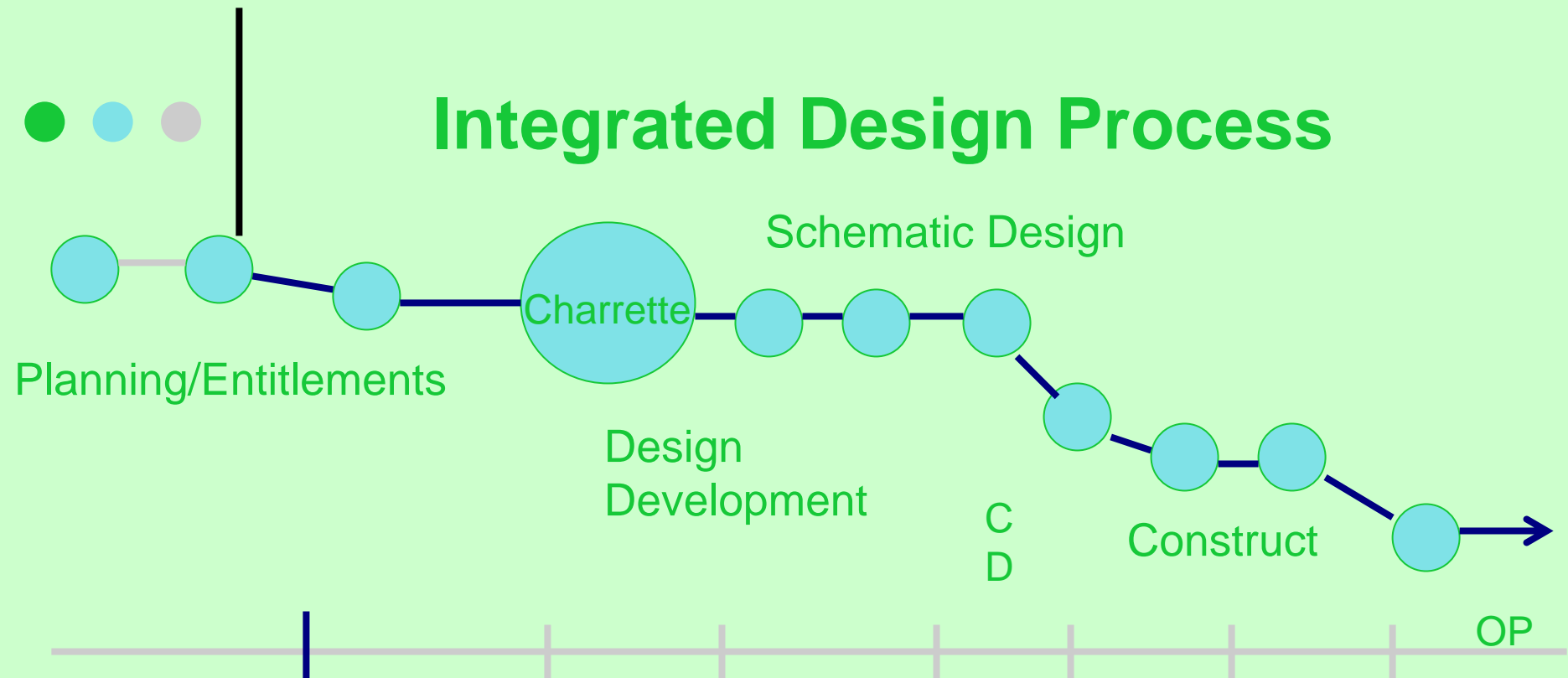
(Contractor, Owner, Architect)

Project Time Line



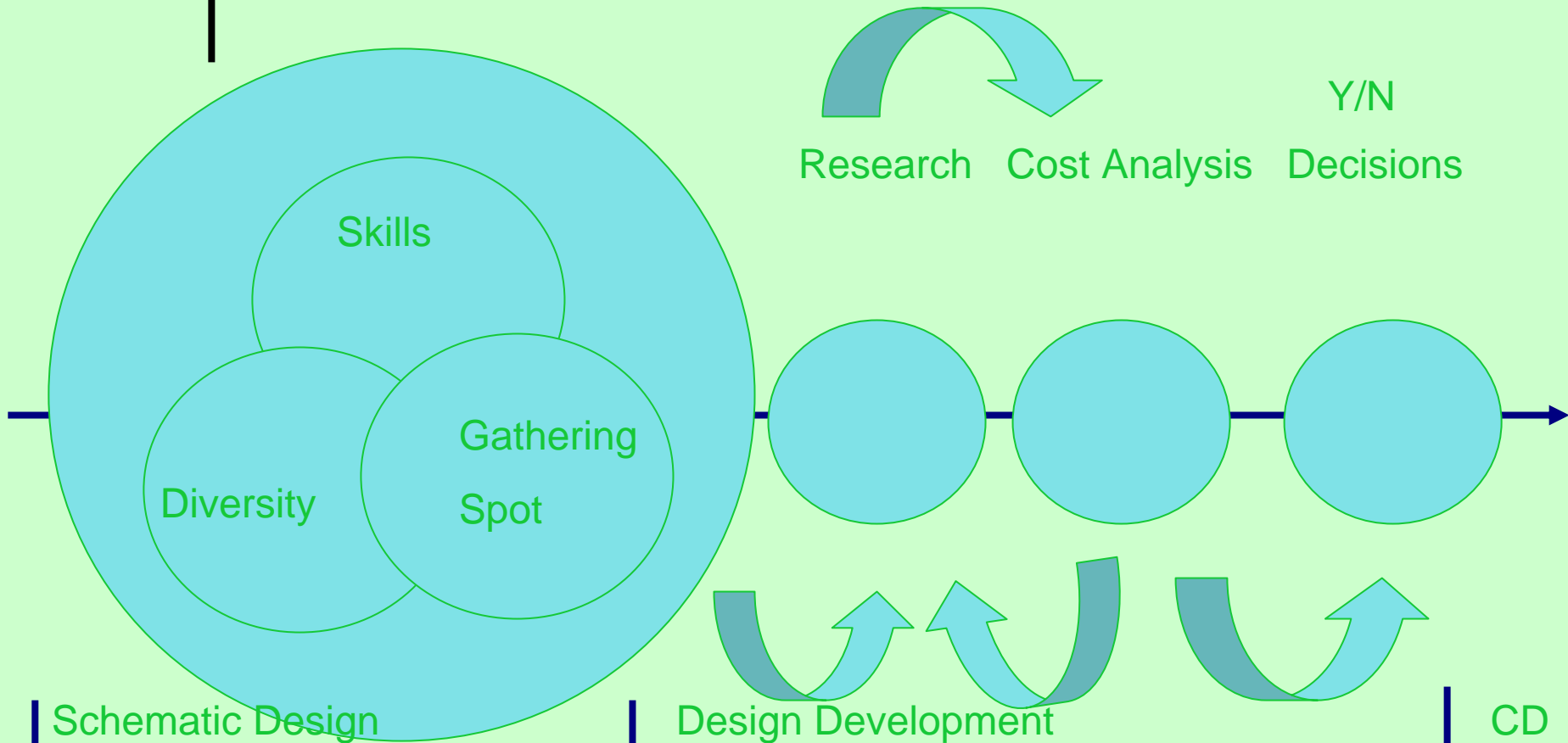
Linear, sequential, architect led, limited collaboration, concepts lost between phases

Integrated Design Process



- Start Early
- Conduct Charrette to foster collaboration and idea-building
- Carry concepts between development phases
- Establish performance targets
- Develop cost estimates throughout the design process
- Establish communication structure and feedback loops

Typical Charrette



At the Charrette: Determine project goals, select rating system, funder's influences, choose specific strategies, assign responsibilities & establish feedback

After Charrette: Follow up with research, cost analysis, and decision-making



Our Charrette Participants

- Bagley Housing Association – Developer
- West Construction Services – Gen Contractor
 - West's selected subcontractors – HVAC, Plumber, Insulator, Carpenter/Framer
- Steven C. Flum Architects – Project architect
- WARM Training – Green Communities Consultant
- Others that can be involved:
 - Landscaper
 - Lumber and trim supplier
 - Municipal official

Our Charrette Process

- Green Communities Planning Session
 - Can we meet their criteria?
 - How much will it cost?
 - Which Optional criteria can/should we meet?
- Very interactive with a lot of give and take
- First time any of us were involved in a fully collaborative design process
- We were surprised how much all of us already knew!





Green Communities Analysis

(see attached)





Lessons Learned

- Initial resistance is strong – address this ASAP
 - Afraid of change or unknown
 - Time and expenses can't be recaptured
 - How will it affect my business and SOP?
- All were pleasantly surprised at how simple and natural the process is.
- Find your Green “mojo” and ask others to jump on board
- Stay vigilant with your message
 - Display it in everything you do
 - Especially keep subs engaged since they are 2-3 layers removed from the process
- Start the process early
 - When accepted by all, it always translates into lower costs
 - Those on board bring more energy and planning to the table



How to Start Out

- Pick a couple high performance strategies and focus on them... just get started:
 - Thermal Bypass
 - Systems Integration
 - Lot and Site plan attributes
 - Landscaping
- Consider techniques and materials you can use at little or no cost (see attached).
- Design with passive solar gain and lot orientation in mind
 - Maximize or minimize window placement - typical wind, sun and precipitation exposure
 - Use of overhangs
- Communicate value of High Performance homes.
- Be sure to expressly tell buyers why your homes are different and what it means to them.



Sources of Information

- US Department of Energy - *Energy Star Program* “Thermal Bypass Checklist”
 - www.energystar.gov
- *Masco Contractor’s Services* – “Environment for Living” program
 - www.masco-csc.com
- Enterprise Foundation, Great Lakes Capital Fund and Michigan State Housing Authority Green Communities
 - www.greencommunitiesonline.org
- US Green Building Council - *LEED for Homes*
 - www.usgbc.org/leed/homes
- Mike Holcomb, Alliance for Environmental Sustainability, Grand Rapids, MI Phone: (616) 878-7200, email mholcomb@fnwusers.com